STATE BUILDING CODE COUNCIL

Log No. <u>14-E12</u>

1. St	tate Building C	ode to be Amended:				
	Internation	onal Building Code				
	☐ ICC ANS	SI A117.1 Accessibility Code	☐ International Mechanical Code			
	Internation	onal Existing Building Code	☐ International Fuel Gas Code			
	Internation	onal Residential Code	☐ NFPA 54 National Fuel Gas Code			
	Internation	onal Fire Code	☐ NFPA 58 Liquefied Petroleum Gas Code			
	Uniform	Plumbing Code	☐ Wildland Urban Interface Code			
	Section(s): 2012 WSEC	C403.3.1				
	Title: Economizers	, Simple				
2. P	roponent Name Proponent:	, ,	•			
	Title:	Principal				
	Date:	2/28/2014				
3. D	esignated Cont					
	Name:	C403.3.1 Simple (Specific local government, organization or individual): Eric Vander Mey, PE, Rushing Company Principal 2/28/2014 act Person: Eric Vander Mey Principal 1725 Westlake Ave N, Suite 300, Seattle, WA 98109 206-285-7114 206-321-1677				
	Title:	Principal				
	Address:	1725 Westlake Ave N, Suite 30	00, Seattle, WA 98109			
	Office:	206-285-7114				
	Cell:	206-321-1677				
	E-Mail address: ericv@rushingco.com					

4. Proposed Code Amendment. Reproduce the section to be amended by underlining all added language, striking through all deleted language. Insert <u>new</u> sections in the appropriate place in the code in order to continue the established numbering system of the code. If more than one section is proposed for amendment or more than one page is needed for reproducing the affected section of the code additional pages may be attached. (Examples on the SBCC <u>website</u>)

Code(s) 2012 WSEC **Section(s)** C403.3.1

Amend section to read as follows:

C403.3.1 Economizers. Each cooling system that has a fan shall include an air economizer meeting the requirements of Sections C403.3.1.1 through C403.3.1.1.4.

Exception: Economizers are not required for the systems listed below:

- 1. Qualifying small equipment: This exception shall not be used for unitary cooling equipment installed outdoors or in a mechanical room adjacent to the outdoors. This exception is allowed to be used for other cooling units and split systems with a total cooling capacity rated in accordance with Section C403.2.3 of less than 33,000 Btu/h (hereafter referred to as qualifying small systems) provided that these are high-efficiency cooling equipment with SEER and EER values more than 15 percent higher than minimum efficiencies listed in Tables C403.2.3 (1) through (3), in the appropriate size category, using the same test procedures. Equipment shall be listed in the appropriate certification program to qualify for this exception. The total capacity of all qualifying small equipment without economizers shall not exceed 72,000 Btu/h per building, or 5 percent of its air economizer capacity, whichever is greater. That portion of the equipment serving residential occupancies is not included in determining the total capacity of all units without economizers in a building. Redundant units are not counted in the capacity limitations. This exception shall not be used for the shell-and-core permit or for the initial tenant improvement or for Total Building Performance.
- 2. Systems with dehumidification that affect other systems so as to increase the overall building energy consumption. New humidification equipment shall comply with Section C403.2.3.4.
- 3. For residential occupancies, cooling units installed outdoors or in a mechanical room adjacent to outdoors with a total cooling capacity less than 20,000 Btu/h and other cooling units with a total cooling capacity less than 54,000 Btu/h provided that these are high-efficiency cooling equipment with IEER, SEER, and EER values more than 15 percent higher than minimum efficiencies listed in Tables C403.2.3 (1) through (10), in the appropriate size category, using the same test procedures. Equipment shall be listed in the appropriate certification program to qualify for this exception. For split systems and VRF systems, compliance is based on the cooling capacity of individual fan coil units.
- 4. Where the cooling efficiency meets or exceeds the efficiency requirements in Table C403.3.1(2).

TABLE C403.3.1(2) EQUIPMENT EFFICIENCY PERFORMANCE EXCEPTION FOR ECONOMIZERS

CLIMATE ZONES	COOLING EQUIPMENT PERFORMANCE IMPROVEMENT (EER OR IPLV)
2B	10% Efficiency Improvement
3B	15% Efficiency Improvement
4B	20% Efficiency Improvement

5. For comfort cooling where the cooling *efficiency* meets or exceeds the *efficiency* improvement requirements in Table 403.3.1(3).

TABLE 403.3.1(3)
Eliminate Required Economizer for

Comfort Cooling by Increasing Cooling Efficiency

Comfort Cooling by increasing Cooling Emicien				
Climate Zone	Efficiency Improvement ^a			
<u>2a</u>	<u>17%</u>			
<u>2b</u>	<u>21%</u>			
<u>3a</u>	<u>27%</u>			
<u>3b</u>	<u>32%</u>			
<u>3c</u>	<u>65%</u>			
<u>4a</u>	<u>42%</u>			
<u>4b</u>	<u>49%</u>			
<u>4c</u>	<u>64%</u>			
<u>5a</u>	<u>49%</u>			
<u>5b</u>	<u>59%</u>			
<u>5c</u>	<u>74%</u>			
<u>6a</u>	<u>56%</u>			
<u>6b</u>	<u>65%</u>			
<u>7</u>	<u>72%</u>			
<u>8</u>	<u>77%</u>			

a If a unit is rated with an IPLV, IEER or SEER then to eliminate the required air or water economizer, the minimum cooling efficiency of the HVAC unit must be increased by the percentage shown. If the HVAC unit is only rated with a full load metric like EER or COP cooling then these must be increased by the percentage shown.

5. Briefly explain your proposed amendment, including the purpose, benefits and problems addressed. Specifically note any impacts or benefits to business, and specify construction types, industries and services that would be affected. Finally, please note any potential impact on enforcement such as special reporting requirements or additional inspections required.

Add amendment from ASHRAE 90.1-2010 that allows use of super high-efficiency systems in lieu of airside economizer.

This is not a decrease in 2012 WSEC efficiency as ASHRAE 90.1 review has confirmed these efficiencies are equivalent to the efficiency of a system with airside economizer.

City of Seattle has adopted similar provisions for the 2009 and 2012 SEC:

6. Specify what criteria this proposal meets. You may select more than one.

 Where the cooling efficiency meets or exceeds the efficiency requirements in Table C403.3.1(2).

Table C403.3.1(2) Equipment Efficiency Performance Exception for Economizers

Climate Zones	Cooling Equipment Performance Improvement (EER OR IPLV)
2B	10% Efficiency Improvement
3B	15% Efficiency Improvement
4B	20% Efficiency Improvement
<u>4C</u>	64% Efficiency Improvement

	The amendment is needed to address a critical life/safety need.
	The amendment is needed to address a specific state policy or statute.
	The amendment is needed for consistency with state or federal regulations.
	The amendment is needed to address a unique character of the state.
	The amendment corrects errors and omissions.
7.	Is there an economic impact: Yes No Explain:
	Amendment is as these highly efficient systems are now available and installation can be less costly than a system with airside economizer. As the system is simpler it is more reliable for energy savings over the
	long term.
	If there is an economic impact, use the Table below to estimate the costs and savings of the proposal on construction practices, users and/or the public, the enforcement community, and operation and

	Construction ¹		Enforcement ²		Operations & Maintenance ³	
Building Type	Costs	Benefits ⁴	Costs	Benefits ⁴	Costs	Benefits ⁴
Residential	N/A	N/A	N/A	N/A	N/A	N/A
Single family	N/A	N/A	N/A	N/A	N/A	N/A
Multi-family	N/A	N/A	N/A	N/A	N/A	N/A
Commercial/Retail	N/A	N/A	N/A	N/A	N/A	N/A
Industrial	N/A	N/A	N/A	N/A	N/A	N/A
Institutional	N/A	N/A	N/A	N/A	N/A	N/A

maintenance. If preferred, you may submit an alternate cost benefit analysis.

¹ \$ / square foot of floor area or other cost. Attach data. **Construction** costs are costs prior to occupancy, and include both design and direct construction costs that impact the total cost of the construction to the owner/consumer.

² Cost per project plan. Attach data. Enforcement costs include governmental review of plans, field inspection, and other action required for enforcement.

³ Cost to building owner/tenants over the life of the project.

⁴ Measurable benefit.